



Value structures determining community supported agriculture: insights from Germany

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Abstract

In recent years Community Supported Agriculture (CSA), an innovative grassroots movement connecting consumers with a local farm, has rapidly spread across Germany and other industrialized countries. An increasing number of consumers who are dissatisfied with conventional food supply chains have signed up to receive fresh produce, support a local community and protect the environment. So far little is known, though, about the underlying value structures of CSA. Nevertheless, identifying factors influencing consumers' interest in CSA is regarded as a major aim of contemporary CSA research. This research aims to provide insights into CSA members' value structures, and delineates CSA members by comparing their value structures to those of the German population in general. Schwartz's Portrait Value Questionnaire was used in a standardized online survey of CSA members to mirror the dataset which is available to the German public via the European Social Survey. A total sample of 205 CSA members was used to examine common value structures by comparing them with the German public. This study's findings strongly indicate that a CSA membership goes along with a characteristic value pattern: CSA members highly appreciate self-transcendence and openness to change, but tend to reject conservation and self-enhancement values. Addressing members' preference for openness to change and self-transcendence may help CSAs to reduce fluctuation rates. It might also enhance CSA marketing strategy by addressing potential members' interests more precisely. Therefore, identifying and communicating common values of a CSA might be a key factor in determining its long-term success and stability.

Keywords Community supported agriculture · Environmental consciousness · Social sustainability · Grassroots movement · Values of CSA members

Abbreviations

CSA	Community supported agriculture
ESS	European social survey
MDS	Multidimensional scaling
PVQ	Portrait value questionnaire

Introduction

The progressive intensification and mechanization of agricultural production, as well as the profound structural changes in the agricultural sector, have significantly changed the character of food production and rural areas over the last few decades. Regional supply structures have increasingly been replaced by globalized value chains and networks (Giampietri et al. 2016). However, from a consumer's point of view, global supply chains are opaque and current production practices are regarded as ethically and morally doubtful. There are increasing societal concerns about the impact of modern food production on human health and the environment. These aspects have encouraged a growing group of consumers to find an alternative form of high-quality food supply (Fieldhouse 1996; Gilg and Battershill 1998; Sanneh et al. 2001; Tavernier 2012; Sage 2014). This development is seen as the main reason for the increasing popularity of alternative food networks currently being experienced in many

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industrialized countries worldwide. By providing shorter, regional food supply chains, initiatives like Community Supported Agriculture (CSA) reconnect consumers and producers (Bougherara et al. 2009; Hvitsand 2016). CSA, which originated in Japan (Schnell 2007) and Europe (Cooley and Lass 1998), is recently enjoying increased public attention in Germany: In the last decade, the number of CSAs grew from five in 2007 to 127 in 2017. In addition, there are about 60 initiatives in different stages of foundation, implying the continuing social interest in CSA in Germany (Wellner and Theuvsen 2017).

In the traditional CSA model, a farmer and a group of committed consumers create a local food supply network. Consumers sign in for a share of the CSA and agree to pay a certain amount of money to finance the farming business. In return, the farmer passes the farm's products on to the participating consumers. Vegetables and fruits and, in some cases, also animal-based products, are common commodities of a CSA. The production risk is transferred from the farmer to the community of CSA members: they are financing the production processes despite the potential for fluctuating harvest volume and correspondingly unpredictable share volumes. CSA is an innovative, environmentally-oriented counter-movement initiated by members of a local community. It is interpreted as an attempt to change the prevailing global food value chains (Dubusson-Quellier et al. 2011; Connolly and Klaiber 2014; Bloemmen et al. 2015). For this reason, CSA belongs to the so called 'new social movements' (Helfrich and Bollier 2014), such as Slowfood and Fairtrade. Factors like personal attitudes and emotional involvement are expected to contribute to pro-environmental consciousness, which in turn are embedded in broader personal value structures (Kollmuss and Agyeman 2002). Consequently, consumers' interest in CSA is expected to be enhanced by certain value preferences common to members of the community (Thøgersen and Ölander 2002; Dubusson-Quellier et al. 2011; Zepeda et al. 2014; Thorsøe and Kjeldsen 2016; Robert-Demontrond et al. 2017). Human values characterize individuals, cultural groups, and specific societies, influencing a person's motivation and actions. In a social group, value transmission encompasses commitment and identification of individuals within the group. As a result, members of a community tend to share characteristic underlying value preferences (Schwartz 2012; Miles 2015). Hence, this is expected to also hold true for CSA communities: Individuals who do not appreciate the basic concept of CSA and its underlying values are less likely to become a member or perpetuate the membership (Zepeda et al. 2014). Nevertheless, in addition to the traditional understanding of CSA there are several interpretations of the concept taking different needs into account. As the concept became more widespread in Germany, the number

of initiatives considering CSA as an alternative scheme of direct marketing increased (Wellner and Theuvsen 2017). While CSA models are evolving to become more appealing to a wider group of potential participants, understanding the core values of CSA members seems to be necessary for further developments. Nevertheless, little research has been done yet to identify the underlying value preferences of CSA members in Germany. However, identifying factors influencing consumers' interest in CSA is regarded as a major aim of contemporary CSA research by various scholars (Carolan 2017; Rossi et al. 2017; Vassalos et al. 2017). Since underlying values are reported to influence personal interests and actions (Schwartz 2012), a specific value preference may be decisive for one's interest in CSA.

Therefore, the aim of this study is to identify the underlying value structure that characterizes participation in CSA and may distinguish CSA members from broader society. Analyzing members' value preferences promises important insights into the community. To ensure CSA farms' long-term success and the concept's sustainability, a high level of member retention and recruitment is critical (Woods and Tropp 2015; Freedman and King 2016). Moreover, stable communities are crucial to achieve trust and solidarity within a CSA—as these properties are commonly agreed on as key elements of CSA by different scholars (Dempsey et al. 2009; Peterson et al. 2015; Thorsøe and Kjeldsen 2016). Nevertheless, CSAs often experience high fluctuation rates (Cooley and Lass 1998; Goland 2002; Janssen 2010) and only little support from the community (Brehm and Eisenhauer 2008; Brown and Miller 2008; Pole and Gray 2013; Galt et al. 2017). Addressing the specific value structure of CSA members may strengthen their commitment to CSA. Commitment to the community decreases turnover intention and indicates a wide range of pro-social behaviour, such as helping others (Mowday et al. 1979; Solinger et al. 2008; Connolly and Klaiber 2014).

Furthermore, CSA's marketing strategy may profit from this study's results: identifying the underlying value structure of those interested in CSA will help to address potential members more intelligently (Zenker et al. 2014; Freedman and King 2016). Hence, it might contribute to more effective and substantial marketing of CSA—regarded as important for CSAs' further development (Connolly and Klaiber 2014). Overall, deepening the knowledge about characteristic value structures in CSA may provide practical and theoretical implications to CSA. To contribute to this research aim, we focused on the largely unexplored but expanding CSA movement in Germany (Wellner and Theuvsen 2017). By applying Schwartz' (1992) theory of basic human values, we analysed the value structures of CSA members and distinguished them from the German population in general.

CSA and basic human values

Local food networks like CSA are highly influenced by the values and objectives of their members (Fieldhouse 1996; Brehm and Eisenhauer 2008; Bloemmen et al. 2015). The importance of values within the community expresses itself in consumers' reasons to join a CSA: beyond the supply of fresh local produce, consumers are also motivated by the expected social, ecological, and economical benefits of the scheme. Consumers who are concerned about safety and sustainability of food production and processing highly value the benefits of a CSA scheme for altruistic as well as self-interested concerns (Renting et al. 2012; Robert-Demontrond et al. 2017). Besides the quality of the product itself and the interaction with the community, a sense of moral satisfaction impels consumers to support a system that they believe to be good for the environment, the local community, and their personal health (Russel and Zepeda 2008; Bernard et al. 2016). The majority of CSA members tend to be female, affluent, and higher educated (Lang 2010; Blättel-Mink et al. 2017). Members of social groups are expected to commit more strongly if their personal interests resonate with the goals of the group (Peng et al. 2015)—for instance, with the goals of a CSA community. Members who appreciate ecological farming systems benefit more from their CSA membership (Lang 2005; Peterson et al. 2015). Consumers who joined CSA because of social and environmental concerns are most likely to stay committed over time (Goland 2002). Furthermore, those who feel committed to CSA even tend to change their lifestyles due to the structural elements of the scheme. For instance, a stronger consciousness towards ecological issues can be observed, and an attitudinal shift followed by an increasing appreciation for farming can also be seen (Russel and Zepeda 2008; Blättel-Mink et al. 2017). Moreover, lifestyle preferences influence consumers' interest in CSA (Vassalos et al. 2016) and participation is associated with significant changes towards healthy consumption and lifestyle behavior (Allen et al. 2017; Rossi et al. 2017).

While several studies have focused on consumer motivation to join a CSA (Brehm and Eisenhauer 2008; Cox et al. 2008; Bougherara et al. 2009; Pole and Kumar 2015; Hvitsand 2016; Vassalos et al. 2016), little research has been done to identify the underlying value structure of CSA members. Nevertheless, the influence of values on people's attitudes, motivation and action is well documented (Thøgersen and Ölander 2002; Miles 2015). Previous studies focusing on the relationship between values and pro-environmental behavior may provide some evidence about value structures determining CSA. For instance, Steg's research (2017) indicated that people are

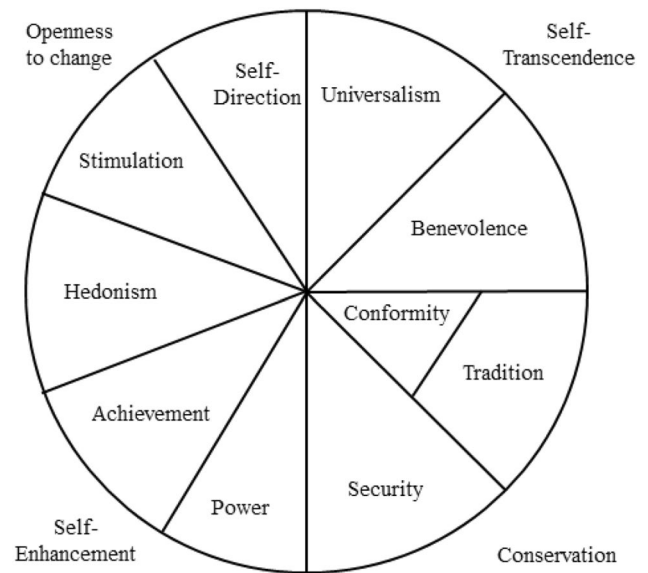


Fig. 1 Theoretical model of structure of relationships among ten values constructs (Schwartz 1992)

predominantly intrinsically motivated act in a pro-environmental manner because contributing to the greater good helps individuals to feel better about themselves. Intrinsic motivation is grounded in self-transcendence, emphasizing altruistic and biospheric values. Furthermore, consumers with strong social orientation and intrinsically orientated values are reported to be more engaged in environmentally friendly and sustainable consumption than those with a strong focus on personal enhancement and externally orientated values (Greibitus et al. 2015; Sharma and Jha 2017). However, there is also some evidence about egocentric values and one's dominance over others may play a certain role within CSA (Robert-Demontrond et al. 2017)—contrary to the concept's intention (Goland 2002).

According to Schwartz and Bilsky (1994, p. 164), human values are characterized as “relatively stable individual preferences that reflect socialization”. As such, values are suspected to be organized by their relative importance, constituting systems that guide the selection and evaluation of actions. Therefore, values appear useful to explain and predict individual behavior and have received significant attention in motivational psychology. The dispositional approach to values is dominant in mainstream social psychology (Rokeach 1973; Schwartz and Bilsky 1987, 1990; Schwartz 1992). Based on his comprehensive empirical findings, Schwartz (1992) constitutes his theory of basic human values, which builds the framework of this study. The theory of basic human values postulates ten distinct types of values: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. The value system is organized by two underlying

dimensions, which are composed of four higher order value types (Fig. 1). The first dimension ranges from openness to change (self-direction, stimulation) to conservation (security, conformity, tradition). This dimension expresses values emphasizing independent thought and action and suggests change to those values characterized by submissive self-restriction, traditional practices, and stability. In the second dimension, self-enhancement (power, achievement) meets self-transcendence (benevolence, universalism). This latter dimension opposes values emphasizing one's dominance over others and the pursuit of one's own relative success to those values which emphasize acceptance of others as equals and concern for their welfare. Individuals endorse different values which they consider to be important. Some of these values may conflict with each other, while certain values might dominate others, thus influencing people's decision-making processes (Schwartz 1992). If a behavioral context refers to multiple competing values, the final behavior represents the tradeoff between these values (Miles 2015).

Although the theory classifies 10 values, on a more basic level, these values form a continuum of related motivations which is represented by the circular structure. The closer values are located on the circular structure, the more similar are their underlying motivations. Distances of values express antagonist motivations (Schwartz 1992, 2012; Schwartz and Bilsky 1994). Based on earlier findings, Schwartz developed the Portrait Value Questionnaire (PVQ, Table 2), to examine value preferences of humans (Bilsky et al. 2010). Evidence for the theoretical structure of Schwartz's value theory has been found in several studies (e.g. Davidov et al. 2008; Goren et al. 2016; Magun et al. 2016). Moreover, the PVQ has proven itself to be a reasonable instrument for collecting human values in the European Social Survey (ESS), regularly collecting the value structures of more than 30 European countries (ESS 2017). Following its establishment in 2001, the academically led ESS has become one of the most important resources concerning religious, social, economic, and political attitudes of the European population (Schnaudt et al. 2014).

Conceptual framework and methods

There are several established value systems that might aid our research aim, and each provides different advantages (Rokeach 1973; De Mooij 2015). However, as none of them is without limitations, we decided to refer to Schwartz' (1992) theory of basic human values for clarification. From a theoretical point of view, Schwartz' theory is regarded as suitable for accounting for both the desired and the desirable value conceptions which are relevant in value research (De Mooij 2015). In particular, Schwartz's theory is preferable since national level data for Germany is available (Davidov

et al. 2008; ESS 2017). Thus, it provides a solid basis for our research aim. Our primary research objective was to identify the value structure of CSA members by applying Schwartz' (1992) PVQ. First, we replicated Schwartz's circumplex values structure. Secondly, to identify the specific value structure of CSA members and distinguish it clearly from the value structure of the German population, we examined the differences between the two groups.

Based on the PVQ (see Table 2), a standardized web-based survey was designed to answer the research question. This questionnaire was distributed among all known CSA farms in Germany (as collected by Wellner and Theuvsen 2017), which in turn passed it on to their members. In total, 204 participants completed the survey comprising primarily females (67.6%), with an average age of 42.5 years (Table 1). As females are overrepresented in the survey, gender bias must be taken into account and will be addressed later in the discussion. Only CSA members who expressed their willingness to continue their membership are considered in the survey to ensure that the dataset reflects the personal values of those individuals who feel connected to the CSA concept. Beside general questions regarding CSA memberships, the survey included the 21-Item PVQ developed by Schwartz (1992) to test the basic human values of CSA members. The PVQ includes short portraits of 21 individuals, gender-matched with the respondents. Table 2 presents the female version of the PVQ. Each portrait describes an individual's goals, aspirations, or wishes that implicitly indicate the importance of a value. Respondents compare themselves to the described person on a six point Likert scale. The respondents' similarity judgement ranges from "very much like me" (= 1) to "not like me at all" (=6). The short scale of the PVQ is advantageous in order to keep surveys as short as possible. Another advantage is the availability of national datasets representing the value structure of Germany which can be used for comparisons between the group under analysis and the wider population. A brief characterization of the samples—the sample of CSA members and the ESS 7—is given in Table 1. While the ESS 7 dataset is seen as representative for the German population over an age of 15 in regards to average age and gender distribution (ESS 2017), there is no evidence about the representativeness of

Table 1 Sample characteristics

	CSA survey	ESS 7
Year of the survey	2016	2014
Country	Germany	Germany
Sample size (n)	204	2891
Female (%)	67.6	50.9
Male (%)	32.4	49.1
Average age (years)	42.5	48.1

Table 2 21-Item version of Schwartz's PVQ (female version; Bilisky et al. 2010)

Higher order value types	Value type	Core motivational goal	Items
Self-enhancement	Power	Social status and prestige, control or dominance over people and resources	1. It is important to her to be rich. She wants to have a lot of money and expensive things 17. It is important to her to get respect from others. She wants people to do what she says
	Achievement	Personal success through demonstrating competence according to social standards	4. It's important to her to show her abilities. She wants people to admire what she does 13. Being very successful is important to her. She hopes people will recognize her achievements
	Hedonism	Pleasure and sensuous gratification for oneself	10. Having a good time is important to her. She likes to "spoil" herself 21. She seeks every chance she can to have fun. It is important to her to do things that give her pleasure
Openness to change	Stimulation	Excitement, novelty, and challenge in life	6. She likes surprises and is always looking for new things to do. She thinks it is important to do lots of different things in life 15. She looks for adventures and likes to take risks. She wants to have an exciting life
	Self-direction	Independent thought and action in choosing, creating, exploring	1. Thinking up new ideas and being creative is important to her. She likes to do things in her own original way 11. It is important to her to make her own decisions about what she does. She likes to be free and not dependent on others
Self-transcendence	Universalism	Understanding, appreciation, tolerance and protection for the welfare of all people and for nature	3. She thinks it is important that every person in the world be treated equally. She believes everyone should have equal opportunities in life 8. It is important to her to listen to people who are different from her. Even when she disagrees with them, she still wants to understand them 19. She strongly believes that people should care for nature. Looking after the environment is important to her
	Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact	12. It is very important to her to help the people around her. She wants to care for their well-being 18. It is important to her to be loyal to her friends. She wants to devote herself to people close to her

Table 2 (continued)

Higher order value types	Value type	Core motivational goal	Items
Conservation	Tradition	Respect, commitment, and acceptance of the customs and ideas that one's culture or religion impose on the individual	9. It is important to her to be humble and modest. She tries not to draw attention to herself 20. Tradition is important to her. She tries to follow the customs handed down by her religion or her family
	Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	7. She believes that people should do what they're told. She thinks people should follow rules at all times, even when no-one is watching 16. It is important to her always to behave properly. She wants to avoid doing anything people would say is wrong
	Security	Safety, harmony, and stability of society, of relationships, and of self	5. It is important to her to live in secure surroundings. She avoids anything that might endanger her safety 14. It is important to her that the government insures her safety against all threats. She wants the state to be strong so it can defend its citizens

the CSA dataset, since the absolute number of CSA members and their socio-demographic characteristics are not yet documented.

Firstly, multidimensional scaling (MDS) was used to examine the extent to which the German CSA sample fits the demands of Schwartz's theory of basic human values. MDS has been a central in attempts to delineate human value structures, displaying the discriminability of values in an easily accessible geometric representation. The purpose of MDS is to find the most comprehensive, but parsimonious, set of continuous latent dimensions that can account for proximity data. It illustrates relations between variables by presenting them as a configuration of points in dimensional space. The distances between points reflect their (dis-) similarities, with similar values located closer together in a two-dimensional area. The formal goodness of an MDS solution is measured by the solutions' stress, aggregating the deviation of the points from the regression line in a data-versus-distance plot into one measure. Stress-I is the most frequently reported measure (Bilsky et al. 2010; Borg et al. 2013, p. 9; Schwartz 2017). For perfect solutions, stress will be zero. Stress-I measures under 0.025 are regarded as "excellent", under 0.05 as "good", under 0.1 as "fair" and under 0.2 as "poor" (Kruskal 1964).

To establish a solution that is not only stress optimal, but also consistent with Schwartz's (1992) theory, a weak confirmatory MDS approach was applied. Theory-based target configurations which assign each value a certain place in the hypothesized structure of values were used to check how precisely such a solution would fit the given data (Borg et al. 2013). Using a theory-based starting configuration was appropriate because Schwartz (1992) offers an explicit, theoretically grounded hypothesis about the structure of values (Bilsky et al. 2010).

This was accomplished by deducing a design matrix following Bilsky (2008), who aimed to create a more standardized way of running an MDS of basic human values. Computations were accomplished with the IBM SPSS Statistics 24 method PROXSCAL, which allows a custom-designed configuration. The matrices of Pearson correlation coefficients between the ten values, calculated by building means beforehand, were analyzed in an ordinal MDS (stress convergence = 0.0001, minimum stress = 0.0001, maximum iterations = 1000), using the described starting configurations.

Secondly, the value structure of CSA members was compared to the value structure of the German population. We used the dataset of the ESS 7 of 2014, available in the ESS archive (ESS 2017). Since missing data might distort results, both samples—namely the CSA dataset and the ESS 7—were cleaned by deleting all sets with at least one missing response to the PVQ or giving the same response to more than 16 value items (Schwartz 2005). Before calculating mean comparisons between the German CSA members

and the German public in general, the two respective three items responding to one value were centered into indices for each of the ten values. Indices were created to provide a more accurate measurement of the theoretical dimensions which could not be achieved by a single variable. To evaluate the extent to which an index measures one dimension that underlines all of its variables, we performed a reliability analysis. The internal consistency of the items in a scale is expressed in Cronbach's alpha. In general, results higher than 0.7 are desirable for indices. Internal reliabilities of Schwartz's PVQ indices are often relatively low, since each index includes only two or three variables. In addition, the variables are constructed to cover the different conceptual components of each value, not to be nearly redundant measures of a narrowly defined concept. Therefore, taking the small number of variables and their necessary heterogeneity into account, even reliabilities of 0.4 are considered as reasonable (Schwartz 2005). To correct individual differences in scale use, the individual mean score of each participant must be subtracted from the ten value indices computed before. This correction converts absolute value scores into value scores reflecting the relative importance of a value to an individual's comprehensive value system. Differences

within the value structure of CSA members and the German population were analyzed by t-tests for independent samples. Following Schwartz (2003), centered value scores were used to analyze group mean comparisons. Levene's test for equality was used to measure the homogeneity of variance (Levene 1960). Beside this, the effect size of the differences between the two groups was measured by Cohen's d (Cohen 1992; Rosnow and Rosenthal 1996).

Results

Replication of Schwartz value theory with CSA members

We reproduced a weak confirmatory MDS with a theory-based starting configuration in accordance with Bilsky et al. (2010). Correlations between the values, the basis for the following MDS, are presented in Table 3. The starting configuration of the design matrix and the final coordinates of the ten values are documented in Table 4. These coordinates determine the arrangement of each value within the two-dimensional space of the circumplex

Table 3 Correlations between the values

	Conformity	Tradition	Benevolence	Universalism	Self-Direction	Stimulation	Hedonism	Achievement	Power	Security
Conformity										
Tradition	0.36									
Benevolence	-0.10	0.04								
Universalism	-0.08	0.00	0.50							
Self-direction	-0.28	-0.12	0.32	0.27						
Stimulation	-0.15	-0.18	0.08	0.13	0.32					
Hedonism	-0.05	0.02	0.17	0.14	0.09	0.47				
Achievement	0.12	0.00	-0.05	-0.16	0.03	0.27	0.23			
Power	0.31	0.04	-0.06	-0.20	-0.09	0.14	0.20	0.57		
Security	0.46	0.36	0.03	0.02	-0.18	-0.17	0.09	0.18	0.26	

Table 4 Design matrix and final solution of the MDS

	Design matrix (Bilsky et al. 2010)		Final solution		
	Dimension 1	Dimension 2	Dimension 1	Dimension 2	
Power	0.00	-1.00	Power	-0.47	0.40
Achievement	-0.64	-0.77	Achievement	-0.28	0.54
Hedonism	-0.98	-0.17	Hedonism	0.21	0.40
Stimulation	-0.87	0.50	Stimulation	0.40	0.49
Self-direction	-0.34	0.94	Self-direction	0.81	0.032
Universalism	0.34	0.94	Universalism	0.60	-0.41
Benevolence	0.87	0.50	Benevolence	0.51	-0.48
Tradition	0.98	-0.17	Tradition	-0.46	-0.57
Conformity	0.49	-0.09	Conformity	-0.73	-0.20
Security	0.64	-0.77	Security	-0.59	-0.19

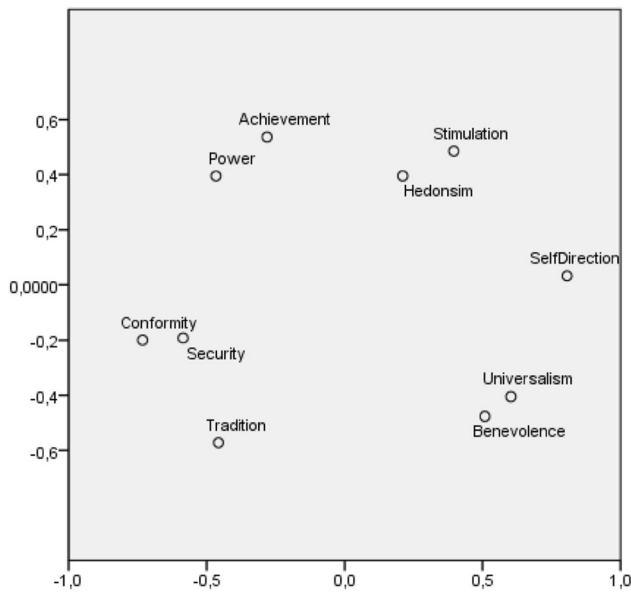


Fig. 2 Two-dimensional MDS model for German CSA members

value structure. Figure 2 illustrates the two-dimensional model. Distances in the model correspond with the correlations between the values: High correlations are represented by small distances, and vice versa. The circular structure of the values, a central part of Schwartz's theory, can be nearly completely replicated with the PVQ dataset of German CSA members.

The presented theory-based MDS solution produces a stress-I value of 0.051. According to Kruskal's (1964) characterization, this result is regarded as "good" and emphasizes an adequate representation of the data. The solution reproduces Schwartz' (1992) two dimensional MDS model (compare Fig. 1) as represented in Fig. 2: items belonging to the same higher order value type appear in the same region. There is also a clear regional separation between the four higher order value types, indicated by the clustering of values belonging to one higher order type. Figure 2 also indicates a slight rotation of the whole circular structure, which does not affect the validity of the theory. A few items are misplaced: hedonism is located more centrally than it should be according to Schwartz's theory. Therefore, the distances between hedonism and its subordinate value types—in this model namely conformity, security, and tradition—are smaller when compared to the original hypotheses. Moreover, these conservational values appear in a modified arrangement. While conformity was supposed to be closely connected to tradition, it actually relates stronger with security.

Table 5 Hierarchy of values for CSA members and the German population

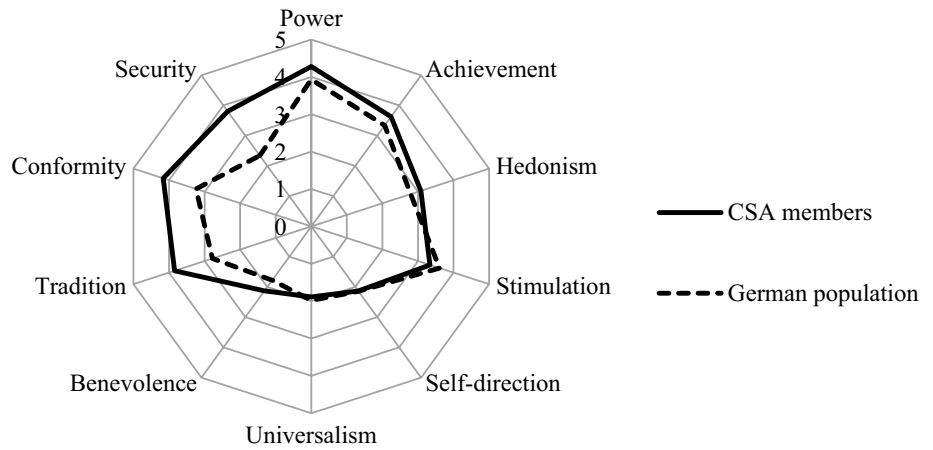
CSA members			German population		
Rank	Value	Mean	Rank	Value	Mean
1	Universalism	1.89	1	Benevolence	1.78
2	Benevolence	2.13	2	Universalism	1.98
3	Self-direction	2.14	3	Self-direction	2.15
4	Hedonism	3.08	4	Security	2.34
5	Stimulation	3.34	5	Hedonism	2.79
6	Achievement	3.63	6	Tradition	2.98
7	Security	3.81	7	Conformity	3.24
8	Tradition	3.85	8	Achievement	3.34
9	Conformity	4.15	9	Stimulation	3.61
10	Power	4.28	10	Power	3.93

Differences in value orientations between CSA members and the German population

To analyze the differences in value structures between CSA members and the German population in general, we used a mean comparison approach. As described above, the centered value scores for the ten basic human values were used to analyze differences in value orientations between CSA members and the general German population. Before creating the centered value scores, the reliabilities of the corresponding variable were tested for each value. The reliabilities of the value scale range above the considered minimum of 0.4.

Table 5 presents the relative importance of the ten values to the two groups and indicates differences in value preferences. Both groups strongly identify with universalism, benevolence and self-direction. CSA members, though, pay most attention to universalism and rank the second most important value—benevolence—as notably less important. To the German population, benevolence is the most important value, closely followed by universalism. With regard to the following values, CSA members identify more closely with the values of stimulation and achievement, while tradition and conformity are less important to them compared to the German population. Furthermore, the identification with the values conformity and power is less marked among CSA members, than in the German population as a whole. Figure 3 illustrates the distribution of mean similarities between the two observed groups. Regarding the four higher order values, CSA members clearly identify themselves with values concerning openness to change and self-transcendence, as implied by the mean lower than 3.5. Mean values higher than 3.5 indicate CSA members' clear rejection of the higher order value types of conservation and self-enhancement. Such a clear separation is not observed in the German population,

Fig. 3 Distribution of mean similarities between CSA members and the German population



which identifies more strongly with the entire range of values in question.

To analyze significant differences between the two groups, *t* test for independent samples was used. According to the independent *t*-test, seven out of ten value comparisons indicated a statistically significant difference at the $p < 0.05$ level. The results are documented in Table 6. Highly significant differences between CSA members

and the German public with a strong effect size can be observed for the importance of self-direction. The differences for the values of security (medium effect size), hedonism, stimulation, universalism, tradition, and conformity (small effect size) are also marked. For the value types of power, achievement, and benevolence, there exists no significant divergence between the two observed groups.

Table 6 Value differences between CSA members and the German population

Value type	Group	N	Mean	SD	Centered value mean	Centered value SD	t-value	df	p	Effect size Cohen's (d)
Power	CSA	204	4.28	0.83	1.11	0.71	- 1.21	245.66	0.227	-
	Germany	2891	3.93	0.97	1.18	0.85				
Achievement	CSA	204	3.63	0.46	- 1.20	0.90	- 1.82	3093	0.069	-
	Germany	2891	3.34	0.57	- 0.62	0.94				
Hedonism	CSA	204	3.08	0.91	- 0.09	0.77	- 2.26	244.10	0.025	- 0.29
	Germany	2891	2.79	1.09	0.04	0.91				
Stimulation	CSA	204	3.34	1.01	0.17	0.90	- 9.59	3093	0.000	- 0.35
	Germany	2891	3.61	1.13	0.85	0.99				
Self-direction	CSA	204	2.14	0.83	- 1.02	0.81	- 6.85	227.423	0.000	- 0.91
	Germany	2891	2.147	0.821	- 0.62	0.739				
Universalism	CSA	204	1.89	0.65	- 1.29	0.63	- 11.26	3093	0.000	- 0.41
	Germany	2891	1.98	0.67	- 0.78	0.63				
Benevolence	CSA	204	2.13	0.91	- 1.03	0.63	- 1.35	3093	0.176	-
	Germany	2891	1.78	1.09	- 0.98	0.57				
Tradition	CSA	204	3.85	0.67	0.68	0.82	9.99	3093	0.000	0.36
	Germany	2891	2.78	0.62	0.03	0.91				
Conformity	CSA	204	4.16	0.87	1.00	0.94	7.18	3093	0.000	0.26
	Germany	2891	3.24	0.97	0.49	0.98				
Security	CSA	204	3.81	1.03	0.64	0.82	16.84	3093	0.000	0.61
	Germany	2891	2.34	1.13	- 0.41	0.87				

$p < 0.05$ = significant * ; $p < 0.01$ = highly significant ** ; $p < 0.001$ = very highly significant *** (Rice 1988)

$d > 0.2$ = small; $d > 0.5$ = medium; $d > 0.8$ = large (Cohen 1992)

Discussion

We applied Schwartz's (1992) theory to identify the underlying value structure of the German CSA movement. The identification of the ten values and four higher order value types for CSA members and their replication in a circumplex structure is consistent with the basic human value theory postulated by Schwartz (1992). The goodness of fit is strong. The results imply that German CSA members do not differ from the population regarding the general existence and structure of the four higher order value types. However, when looked at in detail, the CSA members actually do differ on some points from the German public with regard to specific value preferences. Our first research aim was to analyze the value structure of CSA members: Our results imply that a high personal importance of the values of openness to change and self-transcendence, combined with a relatively small influence of conservational and self-enhancement, seems to determine a person's interest in CSA schemes. Our second research aim was to analyze whether CSA members might be distinguished by their value structure from the general German population. As the results imply, CSA members seem to feel significantly more strongly related to the values of self-direction, stimulation, and universalism than the German population in general. They relate significantly less to the values of security, tradition, and conformity as well as hedonism. While hedonism is less important to CSA members than to the German population, they still show a preference for it. No evidence was found for a significant difference in the value preference of CSA members and the German public in general regarding the values power, achievement, and benevolence.

The clear preference of CSA members for the higher order of value types like openness to change and self-transcendence express anxiety-free motivations, as they are seen as growing and self-expansive values. The personal interests of the CSA members, therefore, are expressed through stimulation and self-direction, whereas their relations to others are highly influenced by the self-transcendence values of universalism and benevolence (Schwartz 2012). They distinguish themselves from the German population in a stronger appreciation of openness to change and universalism. Therefore, CSA members' focus on universalistic goals, like a strong concern for the environment and their social surroundings. The motivational goals of universalism relate to consumers' reasons to join a CSA documented in previous studies: a strong environmental orientation, the desire to support a local community that grows food in a sustainable manner and the opportunity to gain knowledge about food production (Brehm and Eisenhauer 2008; Peterson et al. 2015). CSA members'

identification with universalistic values may be regarded as predetermining pro-environmental behavior (Greibitus et al. 2015; Steg 2017). Motivational goals belonging to openness to change are mostly intrinsically motivated. Hedonism, for instance, expresses motivations driven by personal needs and the pleasure associated with satisfying them. Motives related to openness to change are driven by independent thought as well as creating and exploring new things. Moreover, they favor curiosity about excitement, novelty, and challenges as well as changes in life (Bilsky et al. 2010). Hence, the link between a high personal preference for the higher order type openness to change and individual's interest in CSA seems to be reasonable.

The higher order value types self-enhancement and conservation, which express a stronger orientation towards self-protection and prevention of loss (Schwartz 2012), seem to be less important to CSA members. Persons with a high propensity towards self-enhancement tend to consider their own opinions and practical issues over other opinions (Vermeir and Verbeke 2008). Even if these characteristics seem to naturally contradict the membership in a community like CSA, which is supposed to be based on solidarity and understanding (Goland 2002), Robert-Demontrond et al. (2017) found some evidence for them in some CSAs. However, their findings are not supported by our results. CSA members distinguish themselves significantly from the German population in not reporting high conservational values: the need for safety, harmony, and stability of society therefore seems not to excessively determine the actions of CSA members. Hence, CSA members' activities and inclinations may not be restricted by social norms. Customs and ideas of the broader public may not be as important to them compared to the German population in general (Schwartz 2012). CSA members are reported to reject common practices like buying the produce of conventional food supply chains (Bougherara et al. 2009) and focusing on microeconomic degrowth (Bloemmen et al. 2015).

Practical and theoretical implications

Our findings offer some important insights to the practical management of CSA. Ethical consumerism is an important idea to most CSA members—concern for the welfare of the community, the environment, and the nature is central to their beliefs (Bernard et al. 2016; Hvitsand 2016; Carolan 2017). As the results of this study implicate, participants' value structure seems to correspond to this intention. Nevertheless, many CSAs are experiencing high fluctuation rates (Janssen 2010; Zepeda et al. 2014) and little sense of community (Pole and Gray 2013; Galt et al. 2017) endangering the concept's long-term success (Freedman and King 2016). By addressing consumers' existing preference of the higher order value types, such as openness to change and

self-transcendence, CSAs may strengthen members' commitment. Strengthening members' bond to CSA is expected to reduce turnover intention and enhance pro-social behavior, like volunteering and helping others (Mowday et al. 1979; Solinger et al. 2008; Connolly and Klaiber 2014). Hence, addressing the identified value structures may deepen the engagement of a stable core group within the CSA. By espousing related motivational goals within the community—for example fairness, acceptance, social responsibility, sustainability and a caring concern for the community and the natural environment—CSA might address participants' value schemes in order to enlarge their commitment to the group (Bourne et al. 2017). CSAs' marketing may also benefit from these findings: addressing openness to change and self-transcendence via communicating the corresponding motivational goals enhances CSAs' marketing effectiveness by precisely addressing the underlying value preferences of individuals with a personal interest in the CSA scheme. Therefore, it may help to attract like-minded others to join the CSA and maintain a stable core group of members in order to ensure a CSA's long term success (Zenker et al. 2014; Woods and Tropp 2015; Freedman and King 2016).

Besides its practical implications, our research also contributes to the current state of scholarship. As already emphasized by Grebitus et al. (2015), accounting for human values is especially promising in enhancing the understanding of sustainable or environmental consumption choices. By analyzing CSA members' value structure, our studies provide an innovative research approach to the field of CSA studies. Our research comprehensively illustrates the methodological procedures—encouraging other researchers to follow this approach. Hence, it might be a starting point for analyzing differences in CSA members' value preferences in countries worldwide, and contribute to a broader discussion of values' relevance in CSA. The comparison between CSA members' value preferences in different countries—and hence different cultures—is expected to provide comprehensive and detailed insights into the CSA movement. Furthermore, our results indicate that the ten values rebuild Schwartz' (1992) circumplex value structure and, hence, may be clustered into the four higher order value types in further analysis of CSA in Germany. Concerning the values of CSA members in different countries, value structure must be tested for a replication of the circumplex structure first.

Limitations

When interpreting the results of this study some limitations must be acknowledged. Firstly, referring to values structure of a country without any differentiation—as it was done in this study by applying Schwartz' (1992) value theory—could be criticized for ignoring existing differences within a nation. However, this simplification might be useful to

highlight general underlying value tendencies within nations or communities (Fischer and Schwartz 2010; De Mooij 2015; Magun et al. 2016). Nevertheless, when considering our findings one must take into account the cultural background of the German society, which is influenced by its status as an industrialized, high-income country. Therefore, the population and, especially the CSA members, display special value structures that might not be relevant for other countries. For instance, security in terms of food supply might be highly valued by CSA members in developing countries to cover their basic physiological and safety needs (Maslow 1943; Davidov et al. 2008; Fischer and Schwartz 2010). Hence, in developing countries the underlying value structures of CSA members might be significantly different in comparison to those observed in Germany. Moreover, because the influence of values is rather broad and individuals' action only relates to a specific context, there might be different values and motivational goals related to a certain action (Schwartz 2012)—such as joining a CSA. Hence, context is critical in understanding value effects (Miles 2015). Beside values, there are other personal factors—personal habits, for example—that might influence consumers' interest in CSA (Kollmuss and Agyeman 2002). By solely referring to values, our study potentially simplifies these multiple interactions.

One must also acknowledge that differences in value structures could relate to socio-demographic variables, like gender, for instance. In our sample of CSA members, the participation of women was particularly high. As women tend to rate self-transcendental values higher than men do (Schwartz 2017), our results might be affected by gender bias. Previous studies, however, documented a higher interest of women in the CSA movement, even though precise data are not yet available (Lang 2010; Blättel-Mink et al. 2017). Therefore, the examined differences in value structure between the CSA member's sample and the German population are relevant, even though minor discrepancies due to the sample characteristics cannot be discounted. Moreover, especially in web-based enrolment, a self-selection bias may occur and must be taken into account when interpreting the results (Keiding and Louis 2018).

Further research

To validate the findings of this study, further research with larger sample sizes is necessary. In terms of the further diffusion of CSA, it would be helpful to investigate whether CSA members in other countries than Germany show similar values structures. CSA members' individual perception of the concept, and motivations to participate, are connected to their specific value structure. An in-depth analysis of CSA members' value structure might, therefore, reveal motivational clusters within the movement—a phenomenon that has been documented in previous studies. Besides the

collaborative models fostering community, rather market-oriented CSAs have been established (Pole and Gray 2013; Woods and Tropp 2015). Further analysis may address differences in members' value structure between these two models. Furthermore, to enhance the understanding of a person's identification with the CSA scheme, his or her commitment to the community might be evaluated and analyzed in relation to the value congruence between a single member and the group. Moreover, in-group decision making processes need to be observed for a better understanding of CSA.

Conclusion

Identifying factors influencing consumers' interest in CSA is regarded as a major aim of contemporary CSA research. The results of our study reveal insights into the specific value structure of CSA members' in Germany through application of Schwartz' (1992) theory of basic human values. To explore the underlying value structures of CSA members we compared their value preferences to those of the German population in general. The findings indicate that a CSA membership goes along with a characteristic value pattern that distinguishes them from the general population: CSA members tend to show a high personal relatedness to the higher order values of openness to change and self-transcendence. According to these findings, CSA members focus on universalistic goals, like a strong concern for the environment and their social surroundings. Personal growth and self-expansion are important to them. They also show a relatively small preference for conservational and self-enhancement values. Self-protection and sticking to social norms are not as important to CSA members as they are to the German population in general. Addressing members' preference for openness to change and self-transcendence may help CSAs to reduce fluctuation rates and enhance members' commitment to the community. To address current and potential CSA members' interest more precisely and link them to the community, CSAs might espouse motivational goals related to pro-social and pro-environmental values. Furthermore, it might expand CSA marketing strategies by addressing potential members' interests more precisely. Therefore, identifying and communicating common values of a CSA might be a key factor in determining its stability and long-term success.

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